



NASA'S LAUNCH COMMUNICATIONS SEGMENT: ADVANCED COMMUNICATIONS CAPABILITIES FOR THE FLORIDA SPACEPORT

NASA Goddard Space Flight Center's Near Earth Network Launch Communications Segment (LCS) consists of two modern ground stations designed to complement the U.S. Air Force's Eastern Range, enabling next-generation space missions and launch vehicles departing from, or returning to, the Florida spaceport. The LCS stations provide the critical link between astronauts and mission controllers on crewed flights, and augment launch vehicle telemetry and orbital tracking communications for robotic missions.

FEATURED CAPABILITIES

LCS provides a broad array of communications services:

- Pre-launch, launch, ascent and landing communications services
- Agile, tailored and robust solutions for a variety of customer needs
- Simultaneous transmitting and receiving via S-band
- Support of IRIG and CCSDS space link standards, advanced modulation and encoding, and 2 Mbps data rates
- Remote monitor and control for routine events and pre-mission testing
- Common Space Link Extension (SLE) user gateway/IP baseband data interfaces
- Orbital communications services to near-Earth users
- Standard service scheduling through the Near Earth Network Scheduling Office
- Antenna auto-tracking with automatic fail-over to Launch Trajectory Acquisition System (LTAS) or predicted vectors
- Doppler and ranging capabilities

STRATEGIC LOCATIONS

LCS consists of two strategically placed permanent ground stations: the Kennedy Uplink Station on site at NASA's Kennedy Space Center (KSC) and the Ponce de Leon Station 40 miles north in New Smyrna Beach, Florida. Each of these sites has a 6.1-meter antenna capable of simultaneously transmitting and receiving S-band signals. The two-site architecture ensures continuous signal coverage during launch, as well as for vehicles returning to the launch site or the Shuttle Landing Facility.

Additional down-range capabilities are under development in partnership with NASA Wallops Flight Facility's Range, the U.S. Air Force, and KSC for mission-specific needs, including a ground station in Bermuda.



CONTACT

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